



FEDERALLY PROTECTED ANIMAL AND PLANT SPECIES OBSERVED ON U.S. DEPARTMENT OF ENERGY PROPERTIES

October 2002

Office of Environmental Policy and Guidance (EH-41)

CONTENTS

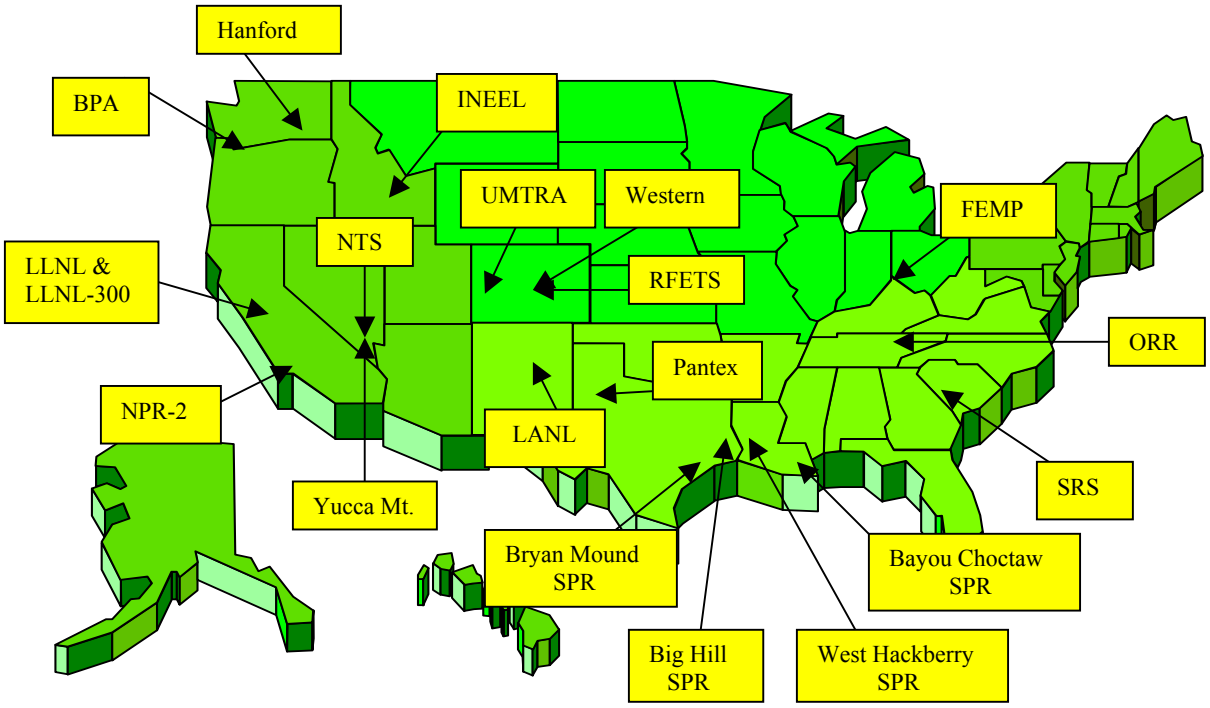
INTRODUCTION

The U.S. Department of Energy (DOE) manages approximately 2,284,339 acres of land at several locations throughout the United States. Though the acreage DOE manages is relatively small in comparison to other land-management Federal agencies (i.e., U.S. Department of Agriculture, U.S. Department of the Interior), it includes an array of ecosystems including wetlands, grasslands, high plains and deserts. These ecosystems harbor diverse populations of common plants and animals and are important for sustaining populations of endangered and threatened species. DOE is the steward of no less than 30 of North America's vanishing plant and animal species and their associated habitats, and takes its stewardship responsibilities for these unique biological resources very seriously. DOE complies with the Endangered Species Act (ESA--see Appendix A) and the National Environmental Policy Act (NEPA), and works closely with the U.S. Fish and Wildlife Service (FWS) and State agencies to provide maximum protection for endangered and threatened species and their associated habitats.

This report represents a logical expansion of an April 6, 2000, EH-41 memorandum, "Endangered Species on DOE-Owned Lands," which was simply a list and the first attempt by DOE to document all known federally protected species observed on DOE sites. Included in this report for each site are brief ecosystem and habitat descriptions, an inventory of protected species accompanied by photographs (if available and DOE has been granted permission for their use), and any protective measures proposed or implemented by DOE. Information on precise geographic locations for individual species (especially plants) is not provided due to the restricted access of many DOE sites and species vulnerability. The data incorporated into this report was obtained from various sources including personal communications with DOE personnel (i.e., program managers, biologists) at all of its sites, FWS personnel, and a review of pertinent documents (i.e., annual site environmental reports, environmental impact statements [EIS's], habitat management plans). Only those sites with verifiable sightings of federally protected species (those species that are listed as federally endangered or threatened) are included in this report. For detailed information on a particular species the reader is directed to the FWS's Endangered Species Program website at: http://endangered.fws.gov/ and to their regional links at Appendix B. This report is subject to change as new species are listed or existing species are delisted (see Appendix D).

Lee Banicki of DOE's Office of Environmental Policy & Guidance (EH-41) prepared this report and any questions or comments should be directed to him preferably via email at: leroy.banicki@eh.doe.gov or by phone at (202) 586-5193.

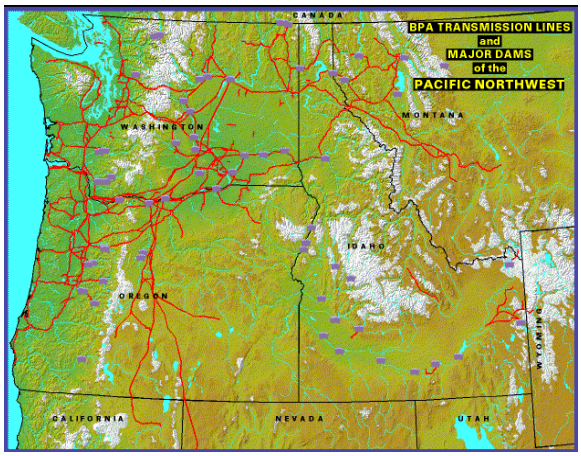
DOE SITES WHERE FEDERALLY PROTECTED SPECIES HAVE BEEN OBSERVED



LEGEND:

BPA (Bonneville Power Administration-headquarters, Portland, OR)
FEMP (Fernald Environmental Management Project)
Hanford (Hanford Site)
INEEL (Idaho National Engineering and Environmental Laboratory)
LANL (Los Alamos National Laboratory)
LLNL & LLNL-300 (Lawrence Livermore National Laboratory Site 300)
NPR-2 (Naval Petroleum Reserve 2 in California)
NTS (Nevada Test Site)
ORR (Oak Ridge Reservation)
Pantex (Pantex Plant)
RFETS (Rocky Flats Environmental Technology Site)
SPR (Strategic Petroleum Reserve)
SRS (Savannah River Site)
UMTRA (Uranium Mill Tailings Remediation Project-project office, Grand Junction, CO)
Western (Western Area Power Administration-corporate headquarters, Lakewood, CO)
Yucca Mt. (Yucca Mountain)

Bonneville Power Administration (BPA)



BPA provides electricity to customers in the Pacific Northwest States of Washington, Oregon, Idaho, and parts of Montana, Wyoming, Utah, Nevada, and California, and supplies surplus energy to numerous customers in Canada and California. To ensure that power can be delivered reliably throughout the service area, BPA has built and owns more than 15,000 circuit miles of high-voltage transmission lines and about 400 substations.

Protected Species: Bradshaw's desert-parsley, also known as Bradshaw's lomatium (*Lomatium bradshawii*), a federally endangered plant occurring in Oregon and Washington State, is the only federally protected species that has been observed on BPA lands.

Photo: US Forest Service &
Bureau of Land Management

Bradshaw's desert-parsley (*Lomatium bradshawii*)

Endangered

Fernald Environmental Management Project (FEMP)

FEMP, originally known as the Feed Materials Production Center (FMPC) was constructed from 1950-51 on a 1,050-acre tract of land just north of the farming community of Fernald, Ohio, between Hamilton and Butler Counties. FEMP's natural vegetation is comprised of a broad-leafed deciduous forest dominated by maple hardwoods with non-native grasslands covering most of the remainder of the site.

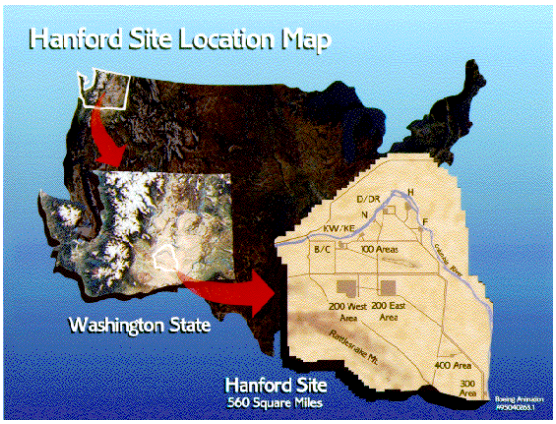
Protected Species: Since 1993, several surveys have been conducted to determine the presence of any endangered or threatened species at FEMP. One species of mammal, the endangered Indiana bat (*Myotis sodalis*), has been observed on FEMP property (one individual captured and released in August 1999). Excellent habitat for the Indiana bat exists onsite and a breeding population was found offsite on a tributary of the Great Miami River.

Photo: US Fish & Wildlife Service

Indiana bat (*Myotis sodalis*)

Endangered

Hanford Site (Hanford)



Hanford is located in south central Washington State and encompasses 586 square miles of semiarid shrub and grasslands just north of the confluence of the Snake and Yakima Rivers with the Columbia River.

Protected Species: The federally threatened Bald eagle (*Haliaeetus leucocephalus*) has been observed on Hanford property. Hanford finalized a bald eagle management plan (DOE/RL-94-150) in 1994, which established seasonal 800-meter restricted access zones around all active nest sites and five major communal roosting sites. Under the plan if nesting activities are observed in January or February, all Hanford related activities within a restricted access zone are constrained or limited until the pair abandons nesting or successfully rears young.

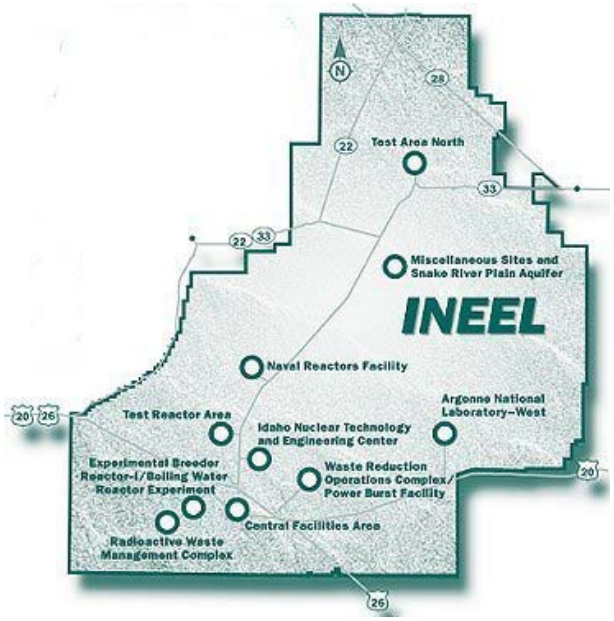
Photo: US Fish & Wildlife Service

Bald eagle (*Haliaeetus leucocephalus*)

Threatened

(Note: The Bald eagle was proposed for delisting by the FWS on July 6, 1999, and this proposal is currently under review).

Idaho National Engineering and Environmental Laboratory (INEEL)



INEEL, formerly known as INEL, encompasses 890 square miles and is situated on the eastern Snake River Plain in southeastern Idaho, at an average elevation of 4,900 feet. The INEEL lies within a cool desert ecosystem dominated by shrub-steppe vegetation where sagebrush occupies over 80% of the site. Immediately beyond the boundaries of the INEEL are desert, foothills, and land used for agriculture.

Protected Species: Two federally protected species may occasionally spend time on the INEEL: the threatened Bald eagle (*Haliaeetus leucocephalus*) and the Gray wolf (*Canis lupus*). Gray wolves found in the geographical region that includes the INEEL are identified as an Experimental/Non-essential population and treated as a threatened species. Bald eagles occasionally winter on part of the INEEL and there have been unsubstantiated sightings of Gray wolves.

Photo: Gerald & Buff Corsi-California Academy of Sciences

Gray wolf (*Canis lupus*)

Endangered
(On the INEEL the species is treated as threatened)

Photo: US Fish & Wildlife Service

Bald eagle *(Haliaeetus leucocephalus)*

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999, and the proposal is currently under review).

Lawrence Livermore National Laboratory Livermore Site (LLNL) and Site 300 Experimental Test Site (LLNL Site 300)

LLNL's main site, also known as Livermore Site, is located in California's Tri-Valley region east of San Francisco. The Livermore Site occupies an area of 3.28 km^2 (1.26 square miles, or 806 acres), including the land that serves as a buffer zone around the site.

LLNL Site 300 is located roughly 20 km (12 miles) east of the LLNL Livermore Site in Alameda and San Joaquin Counties and encompasses an area of nearly 2,825 hectares (7,000 acres). The area is characterized by rolling hills and steep canyons, with large buffer areas of wildland consisting of a diversity of five major plant community types.

Protected Species (Livermore Site): The Livermore Site is mostly developed but still contains a small but viable population of the threatened California red-legged frog (*Rana aurora draytonii*), which is predominantly found in the Arroyo Las Positas, which flows around the northern perimeter of the site. A portion of the Livermore Site also falls within recently designated critical habitat for the California red-legged frog. This population is regionally important since the eastern San Francisco Bay Area is highly urbanized and most remaining populations are highly fragmented. Threats to this population are mostly due to invasive species such as the bullfrog (*Rana catesbeiana*) and habitat loss.

Protected Species (LLNL Site 300): The LLNL Site 300 is home to four federally protected species: the threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*), the threatened California red-legged frog (*Rana aurora draytonii*), the endangered Large-flowered fiddleneck (*Amsinckia grandiflora*) and the threatened Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

The FWS has designated most of the southwest portion of the site to be included as critical habitat for the Alameda whipsnake. The Alameda whipsnake occurs in the soft chaparral habitats that contain its major prey, the western fence lizard. California red-legged frogs are found site-wide in wetland areas that are seasonally or annually inundated. Measures to mitigate the potential for future impacts to both the Alameda whipsnake and California red-legged frog were recently developed in consultation with the FWS. However, the immigration by the non-native feral pig (*Sus scrofa*) into these species habitats poses a threat to its long-term existence at LLNL Site 300. Feral pigs are currently not resident on the property throughout the year. Two of the three known natural populations of the Large-flowered fiddleneck occur at LLNL Site 300, and a portion of the site (160 acres) has been designated as the *Amsinckia grandiflora* Reserve.

DOE and the FWS continue to monitor this species and to further develop habitat restoration and maintenance techniques to ensure its continued survival. Valley elderberry longhorn beetles are found in association with elderberry bushes. Several stands of elderberry occur at Site 300 and evidence of the beetle (exit holes) has been observed in some locations.

Photo: William Flaxington

California red-legged frog
(*Rana aurora draytonii*)

Threatened

Photo: William Flaxington

American bullfrog
(Rana catesbienna)

(This image of the common American bullfrog is presented for purposes of comparison only with the threatened California red-legged frog).

Photo: Charles Webber, California Academy of Sciences

Large-flowered fiddleneck
(*Amsinkia grandiflora*)

Endangered

Photo: Sheila Larsen-US Fish & Wildlife Service

Alameda whipsnake
(*Masticophis lateralis euryxanthus)*

Threatened

Photo: Charles Webber, California Academy of Sciences

Valley elderberry longhorn beetle
(*Desmocerus californicus dimorphus*)

Threatened

Los Alamos National Laboratory (LANL)

LANL is located in Los Alamos County, in north central New Mexico. The Laboratory and adjacent communities are situated on Pajarito Plateau, which consists of a series of finger-like mesas separated by deep east-to-west oriented canyons cut by intermittent streams. Mesa tops range in elevation from approximately 7,800 feet on the flanks of the Jemez Mountains to about 6,200 feet at their eastern termination above the Rio Grande Valley. The surrounding land is largely undeveloped.

Protected Species: The threatened Bald eagle (*Haliaeetus leucocephalus*), the threatened Mexican spotted owl (*Strix occidentalis lucida*), the endangered Southwestern willow flycatcher (*Empidonax traillii extimus*) and the endangered Whooping crane (*Grus americana*) have been observed on LANL property. As a result of a final EIS published for the Dual Axis Radiographic Hydrodynamic Test (DARHT) facility in 1995, DOE committed to the development of a habitat management plan for all threatened and endangered species occurring at LANL. The plan was to be used to determine long-range mitigation actions to protect the habitat of these species. The EIS contained additional mitigation measures for protecting the nesting habitat of the Mexican spotted owl and other selected species; it also recommended the collection of baseline data to document the presence of contaminants that could adversely affect these species. DOE issued a Record of Decision (ROD) in October 1995, which committed DOE to the implementation of the mitigation measures described above and added that the habitat management plan must be completed within three years from the date of the ROD and updated as necessary. The habitat management plan implemented in 1998, fulfilled the requirements of the ROD and also complied with the provisions of the ESA, specifically that Federal agencies carry out programs for the conservation of threatened and endangered species and ensure that their actions are not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of habitat determined to be critical to the species.

Photo: US Fish & Wildlife Service

Bald eagle (*Haliaeetus leucocephalus*)

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999, and the proposal is currently under review).

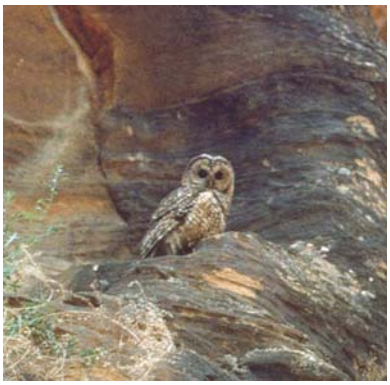


Photo: US Fish & Wildlife Service

Mexican spotted owl (*Strix occidentalis lucida*)

Threatened

Photo: US Fish & Wildlife Service

Whooping crane (*Grus americana*)

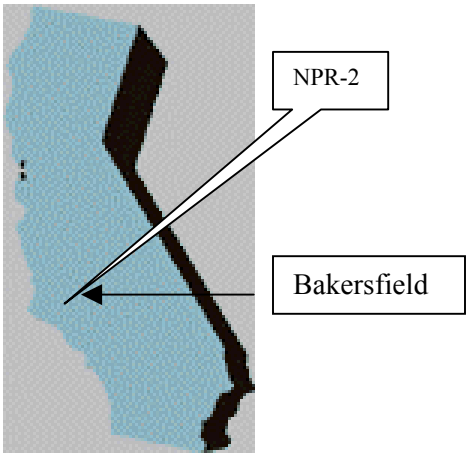
Endangered

Photo: Michael Moore, USGS

Southwestern willow flycatcher (*Empidonax traillii extimus*)

Endangered

Naval Petroleum Reserve No. 2 (NPR-2)



NPR-2 is located approximately 25 miles southwest of Bakersfield in Kern County, California and originally consisted of Naval Petroleum Reserve No. 1 (NPR-1) and Naval Petroleum Reserve No. 2 (NPR-2). NPR-1 was sold to Occidental of Elk Hills, Inc., and is no longer a DOE facility. However, NPR-2, consisting of approximately 10,000 acres of semiarid land dominated by chaparral, remains a DOE-owned facility.

Protected Species: Several federally protected species have been observed at the site including the endangered Blunt-nosed lizard (*Gambilia silus*), the endangered Giant kangaroo rat (*Dipodomys ingens*), the endangered San Joaquin kit fox (*Vulpes macrotis mutica*), the endangered Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), and Hoover's woolly-star (*Eriastrum hooveri*), a threatened plant.

Photo: US Fish & Wildlife Service

Blunt-nosed leopard lizard (*Gambilia silus*)

Endangered

Photo: Dr. Lloyd Glenn Ingles, California Academy of Sciences

San Joaquin kit fox (*Vulpes macrotis mutica*)

Endangered

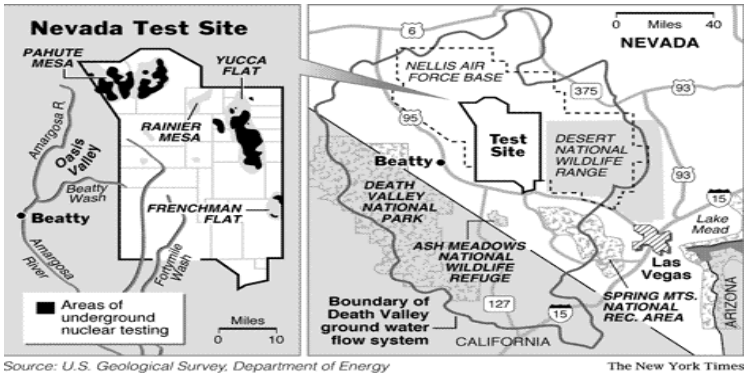
Photo: Roxanne Bittman, California Native Plant Society

Hoover's woolly-star (*Eriastrum hooveri*)

Threatened

(Note: on March 6, 2001, the US Fish and Wildlife Service issued a proposal to delist Hoover's woolly-star from the List of Endangered and Threatened Plants. The proposal is currently under review).

Nevada Test Site (NTS)



NTS is located in Nye County in southern Nevada, about 55 miles northwest of Las Vegas, Nevada. The area is characterized by desert valley and Great Basin mountain terrain and topography.

Protected Species: The threatened Bald eagle (*Haliaeetus leucocephalus*) and the threatened Desert tortoise (*Gopherus agassizii*) are the only federally protected species known to occur on the NTS. The Bald eagle is an uncommon transient to the NTS and is not expected to be impacted by NTS activities. The Desert tortoise, however, is vulnerable to a variety of activities at the NTS. Consultation with the FWS resulted in receipt of a non-jeopardy Biological Opinion[1] in August 1996 for planned activities at the NTS for a ten-year period. The Desert Tortoise Compliance Program implemented the terms and conditions of the Biological Opinion and documented compliance actions taken by National Nuclear Security Administration (NNSA) Nevada Operations Office. The terms and conditions implemented in 2000 included (1) tortoise clearance surveys for 16 projects, (2) onsite monitoring of construction for 14 projects when heavy equipment was being used, (3) periodic monitoring of tortoise-proof fencing around the ER-5-2 Well and at sewage treatment ponds in Areas 6 and 23, and (4) preparation of an annual compliance report for the FWS of NTS activities that were conducted in CY 2000. Project activities conducted in CY 2000 resulted in the loss of 6.21 acres of undisturbed tortoise habitat. Since issuance of the first non-jeopardy Biological Opinion in 1992, no tortoises have been accidentally injured or killed and no tortoises have been captured and displaced from project sites.

[1]A Biological Opinion includes (1) the opinion of the FWS or National Marine Fisheries Service as to whether or not a federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat.

Photo: US Fish & Wildlife Service

Bald eagle (*Haliaeetus leucocephalus*)

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999 and the proposal is currently under review).

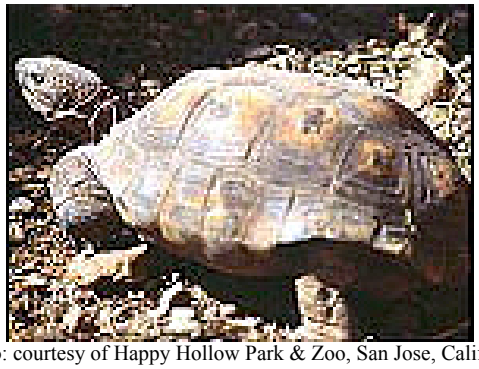


Photo: courtesy of Happy Hollow Park & Zoo, San Jose, California

Desert tortoise (*Gopherus agassizii*)

Threatened (Similarity of Appearance Species [S/A])

(Note: Whenever a species which is not endangered or threatened closely resembles an endangered or threatened species, such species may be treated as either endangered or threatened if the Director of the FWS makes such a determination in accordance with section 4 (e) ("Determination of Endangered Species and Threatened Species") of the Endangered Species Act). The Desert tortoise may be confused with other tortoises native to the U.S. and Mexico.

Oak Ridge Reservation (ORR)

ORR is a 34,700-acre federally owned facility. The ORR has three major plant sites--the Oak Ridge National Laboratory (ORNL), the Oak Ridge Y-12 Plant, and the East Tennessee Technology Park (ETTP) (formerly the K-25 site), and approximately 22,000 acres of relatively undisturbed natural land known as the Oak Ridge National Environmental Research Park, one of seven such facilities managed by DOE nationwide (see Appendix C). Except for a small western portion, the ORR is within the limits of the City of Oak Ridge, located in Anderson and Roane Counties in east Tennessee about 25 miles west of the City of Knoxville. Oak Ridge lies in a valley between the Cumberland and the Blue Ridge Mountain ranges and is bordered on two sides by the Clinch River.

Protected Species: Two federally protected species, the threatened Bald eagle (*Haliaeetus leucocephalus)* and the endangered Gray bat (*Myotis grisescens*) have been observed on the Oak Ridge Reservation. The Bald eagle is seen increasingly in winter at and may well begin to nest at ORNL within a few years. The Gray bat is considered migratory or transient but as this species continues to recover the situation may change.

Photo: US Fish & Wildlife Service

Bald eagle (*Haliaeetus leucocephalus*)

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999 and the proposal is currently under review).

Photo: US Fish & Wildlife Service

Gray bat (*Myotis grisescens*)

Endangered

Pantex Plant (Pantex)

Pantex is located in the Texas Panhandle in Carson County about 17 miles northeast of downtown Amarillo, Texas. DOE owns 10,177 acres and leases an additional 5,800 acres south of the main Plant area from Texas Tech University. The topography is relatively flat, characterized by rolling grassy plains and numerous natural playa basins (shallow lakes), mostly less than .6 miles in diameter.

Protected Species: In 1992, Pantex began a program to assess its natural resources. This program has been expanded each year and has confirmed the presence of several federally listed species including the threatened Bald eagle (*Haliaeetus lecocephalus*), the endangered Whooping crane (*Grus americana*) and the endangered Interior least tern (*Sterna antillarum athalassos*).

Photo: US Fish & Wildlife Service

Bald eagle (*Haliaeetus leucocephalus*)

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999 and the proposal is currently under review).

Photo: US Fish & Wildlife Service

Whooping crane (*Grus americana*)

Endangered

Photo: US Fish & Wildlife Service

Interior least tern (*Sterna antillarum athalassos*)

Endangered

Rocky Flats Environmental Technology Site (RFETS)

RFETS, formerly the Rocky Flats Plant, is an environmental cleanup site located about 16 miles northwest of Denver, Colorado. The site consists of a 385-acre industrial area surrounded by nearly 600 acres of controlled open space at an elevation of approximately 6000 feet. RFETS is located in a transition zone between the Great Plains and the foothills of the Rocky Mountains. Grasslands are the largest plant community at the site.

Protected Species: Currently two federally protected species occur at RFETS: the threatened Bald eagle (*Haliaeetus leucocephalus*) and the threatened Preble's meadow jumping mouse (*Zapus hudsonius preblei*). The FWS recently (July 17, 2002) proposed designating portions of Wyoming and Colorado as critical habitat for the Preble's meadow jumping mouse. Included in these proposed critical habitat areas are river system subdrainages referred to as hydrological unit codes (HUCs) located in the St. Vrain HUC and in the Middle South Platte-Cherry Creek HUC. This proposed critical habitat unit, consisting of three streams in close proximity to one another, is located on RFETS lands. After cleanup and closure of RFETS it is anticipated that this property will be transferred to the FWS National Wildlife Refuge system.

Photo: Don Getty

Bald eagle (*Haliaeetus leucocephalus)*

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999, and the proposal is currently under review).

Photo: US Fish & Wildlife Service

Preble's meadow jumping mouse (*Zapus hudsonius preblei*)

Threatened

Savannah River Site (SRS)

SRS was established in the 1950 on approximately 310 square miles of land in South Carolina adjacent to the Savannah River and 25 miles southeast of Augusta, Georgia, and 12 miles south of Aiken, South Carolina. SRS is located on the Upper Coastal Plain of South Carolina and is part of a wetlands area called the Southern Bottomland Hardwood Swamp region.

Protected Species: Several federally protected species occur at SRS including the threatened American alligator (*Alligator mississippiensis*--SRS supports a population exceeding 200 individuals), the threatened Bald eagle (*Haliaeetus leucocephalus*--present on SRS since the 1950's), the endangered Red-cockaded woodpecker (*Picoides borealis*), the endangered Smooth coneflower (*Echinacea laevigata*--two populations are known to exist at SRS), and the endangered Wood stork (*Mycteria americana*--a breeding colony of Wood storks from Birdsville, Georgia, continues to sporadically use wetland areas of SRS for foraging). Various programs designed to enhance the habitat of these species are in place.

Biological assessments, which are required under NEPA, were conducted by the US Forest Service at SRS to evaluate potential impacts of environmental restoration and forestry related activities on endangered and threatened species. None of these activities was found to have had any significant potential impact on endangered or threatened species.

The biological assessment for the river water system shutdown EIS concluded in 1996 that the proposed action could affect the Bald eagle, American alligator, and Wood stork. Subsequent consultations conducted by SRS in 1996-97 with FWS personnel resulted in a cooperative agreement in which SRS would perform studies on the Bald eagle.

The studies were completed in 1999, and work is continuing on a report of the findings. The results of this report will determine if a mitigation plan should be implemented.

Photo: US Fish & Wildlife Service

Bald eagle (*Haliaeetus leucocephalus*)

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999, and the proposal is currently under review).

Photo: courtesy of Hugh & Carol Nourse and the State Botanical Garden of Georgia

Smooth coneflower (*Echinacea laevigata*)

Endangered

Photo: Gerald & Buff Corsi, California Academy of Sciences

Wood stork (*Mycteria americana*)

Endangered

Photo: US Fish & Wildlife Service

Red-cockaded woodpecker (*Picoides borealis*)

Endangered

Photo: Gerald & Buff Corsi, California Academy of Sciences

American alligator (*Alligator mississippiensis*)

Threatened (Similarity of Appearance Species [S/A])

(Note: Whenever a species which is not endangered or threatened closely resembles an endangered or threatened species, such species may be treated as either endangered or threatened if the Director of the FWS makes such a determination in accordance with section 4 (e) ("Determination of Endangered Species and Threatened Species") of the Endangered Species Act). The species that the American alligator closely resembles and may be confused with is the American crocodile (*Crocodylus acutus*).

Photo: Gerald & Buff Corsi-California Academy of Sciences

American crocodile (*Crocodylus acutus*)

Endangered

Strategic Petroleum Reserve (SPR)

Bryan Mound

Big Hill

West Hackberry

Bayou Choctaw

SPR originally consisted of five sites in Louisiana and Texas (the Weeks Island site in Iberia Parish, Louisiana, was decommissioned in November 1999 and its inventory was transferred to the Big Hill site in Jefferson County, Texas). The habitat surrounding the Bayou Choctaw site in Iberville Parish, Louisiana, is freshwater swampland. Vegetation at the site includes bottomland hardwood forests and deciduous swamps. Existing habitats surrounding the Big Hill site are related to agricultural use. Marsh and prairie areas characterize the Bryan Mound site in Brazoria County, Texas. The West Hackberry site located in Cameron Parish, Louisiana, is situated on 565 acres of land on top of the West Hackberry salt dome. Calcasieu Lake is in the vicinity of the site and Black Lake, a brackish water lake, borders the dome on the northern and western sides.

Protected Species: The threatened Bald eagle (*Haliaeetus leucocephalus*), the endangered Brown pelican (*Pelicanus occidentalis*), and the threatened American alligator (*Alligator mississippiensis*) occur on the West Hackberry site and on lands through which the SPR pipelines pass. The American alligator is also found at the Bayou Choctaw site. The endangered Interior least tern (*Sterna antillarum athalassos*) has been observed at Bryan Mound.

Photo: US Fish & Wildlife Service

Bald eagle (*Haliaeetus leucocephalus*)

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999, and the proposal is currently under review).

Photo: Gerald & Buff Corsi, California Academy of Sciences

American alligator (*Alligator mississippiensis*)

Threatened (Similarity of Appearance Species [S/A])

(Note: Whenever a species which is not endangered or threatened closely resembles an endangered or threatened species, such species may be treated as either endangered or threatened if the Director of the FWS makes such a determination in accordance with section 4(e) ("Determination of Endangered Species and Threatened Species") of the Endangered Species Act). The species that the American alligator closely resembles and may be confused with is the American crocodile (*Crocodylus acutus*).

Photo: Gerald & Buff Corsi-California Academy of Sciences

American crocodile (*Crocodylus acutus*)

Endangered

Photo: Gerald & Buff Corsi, California Academy of Sciences

Brown pelican (*Pelecanus occidentalis*)

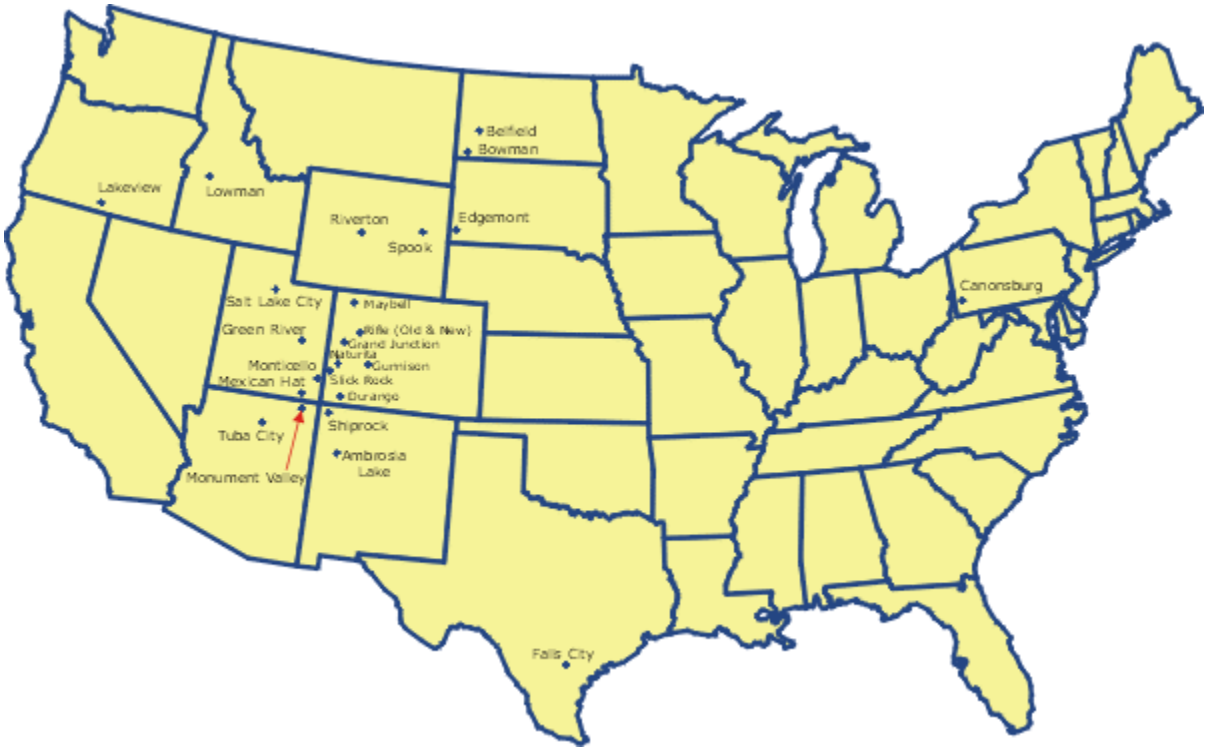
Endangered

Photo: US Fish & Wildlife Service

Interior least tern (*Sterna antillarum athalassos)*

Endangered

Uranium Mill Tailings Remedial Action Project (UMTRA)



Former Uranium Processing Sites

In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy. By September 1998 the last of 22 sites (two sites in North Dakota were removed based on a request from the State) had been remediated. DOE is responsible for the long-term surveillance and maintenance of these sites. Data on individual sites can be accessed through the Grand Junction Project Office website at: http://www.gjpo.doe.gov.

Protected Species: Two federally protected species, the threatened Bald eagle (*Haliaeetus leucocephalus*) and the threatened Mesa Verde cactus (*Sclerocactus mesae-verdae*) have been observed on UMTRA sites. Recent biological surveys have confirmed the presence of the Mesa Verde cactus at the Shiprock Site in New Mexico, with several populations containing from one to more than 100 per group present.

Photo: US Fish & Wildlife Service

Bald eagle (*Haliaeetus leucocephalus*)

Threatened

(Note: the Bald eagle was proposed for delisting on July 6, 1999, and the proposal is currently under review).

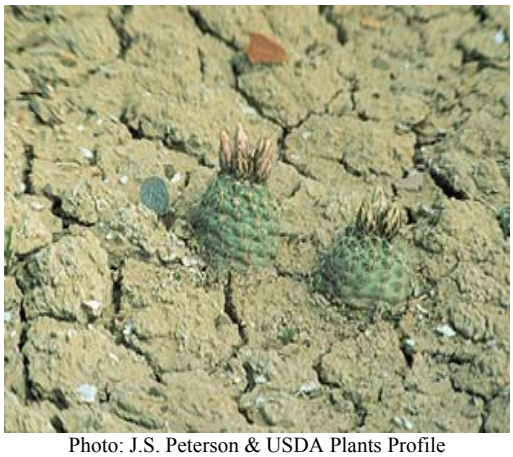
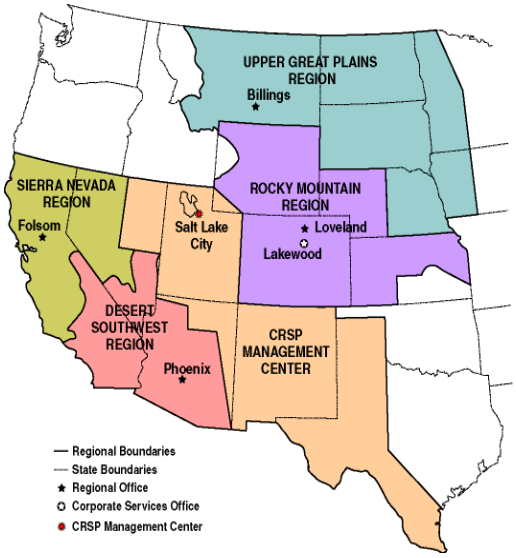


Photo: J.S. Peterson & USDA Plants Profile

Mesa Verde cactus (*Sclerocactus mesae-verdae*)

Threatened

Western Area Power Administration (Western)



Western markets and transmits reliable, cost-based hydroelectric power, and related services to customers in 15 western States (Arizona, California, Colorado, Iowa, Kansas, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, Texas, Utah and Wyoming). Western's major organizations include a Corporate Services Office located in Lakewood, Colorado; four Regional Customer Service Offices located in Billings, Montana; Phoenix, Arizona; Loveland, Colorado; and Folsom, California; and the Colorado River Storage Project Management Center in Salt Lake City, Utah. Western operates and maintains nearly 17,000 miles of transmission lines, substations and power facilities in its service territory.

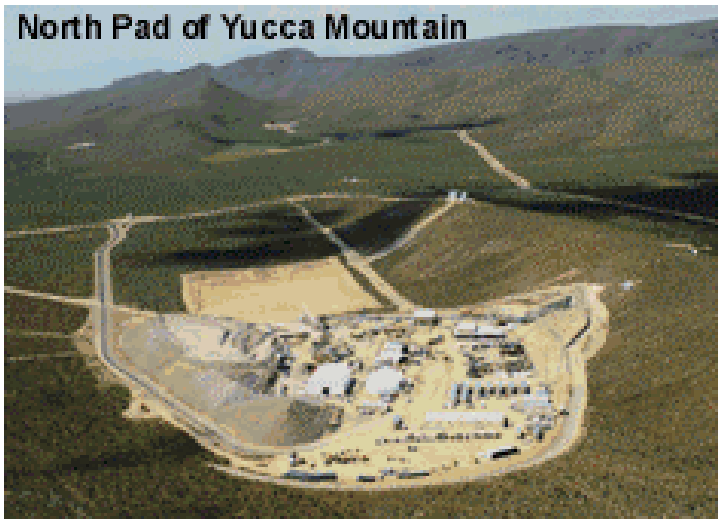
Protected Species: One federally protected species that is known (or thought to occur) on Western's property is the threatened Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The identification of presence is based on exit holes in elderberry bushes at Western's Sierra Nevada Regional Customer Service Office in Folsom, California. The beetles have never been observed there, but Western has developed a mitigation plan for them in cooperation with the FWS and has provided habitat on site. Other federally protected species may occur in or along Western's rights-of-way. However, these lands are not fee-owned by Western. Instead, Western has secured easements from either private landowners or grants of right-of-way from either a Federal, Tribal or State land management agency to operate and maintain high-voltage transmission lines.

Photo: Charles Webber, California Academy of Sciences

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)

Threatened

Yucca Mountain Site (Yucca Mountain)



Yucca Mountain is situated on the southwestern boundary of the Nevada Test Site and encompasses ecological zones ranging from the Mojave Desert to the south through a transition zone, which extends beyond the northern boundary of the site to the cooler and wetter Great Basin desert. The major topographical feature of the site is Yucca Mountain, a long north to south-aligned volcanic ridge with an elevation of 4900 feet.

Protected Species: The threatened Desert tortoise (*Gopherus agassizii*) is the only federally listed species that occurs at Yucca Mountain. In 1990 the FWS issued a Biological Opinion that concluded that site characterization studies were unlikely to jeopardize the continued existence of the desert tortoise. The opinion included a statement allowing the incidental taking of tortoises. In 1996 the Yucca Mountain Site Characterization Office (YMSCO) reinitiated formal consultation with the FWS to clarify its interpretation of take, revise the incidental take limit, and reevaluate terms and conditions for relocating tortoises. In its Biological Opinion the FWS again concluded that it was unlikely that completion of site characterization studies would jeopardize the species or destroy or modify its critical habitat. The opinion also included a non-binding Conservation Recommendation that DOE continue to publish the results of past studies on the Desert tortoise. The new incidental take statement requires that the YMSCO minimize take by conducting preactivity and clearance surveys, ceasing activities that may endanger a tortoise until it can be moved out of harm's way, controlling the locations and speed of vehicular traffic, designing and monitoring escapable trenches, controlling litter, reclaiming habitat, and implementing a worker education program. DOE is required to document incidental take and the amount of habitat disturbed in an annual report. No Desert tortoises were killed or injured as a result of site characterization activities during CY 2000. An annual report of activities conducted to comply with the incidental-take provision was submitted to the FWS in February 2001.

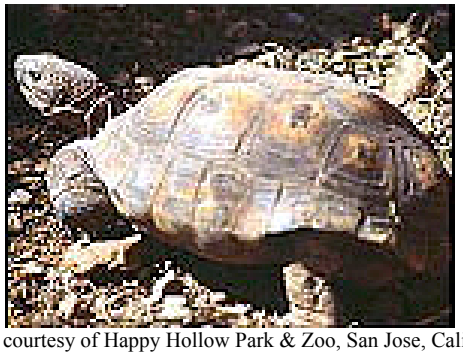


Photo: courtesy of Happy Hollow Park & Zoo, San Jose, California

Desert tortoise (*Gopherus agassizii*)

Threatened (Similarity of Appearance Species [S/A])

(Note: Whenever a species which is not endangered or threatened closely resembles an endangered or threatened species, such species may be treated as either endangered or threatened if the Director of the FWS makes such a determination in accordance with section 4 (e) ("Determination of Endangered Species and Threatened Species") of the Endangered Species Act). The Desert tortoise may be confused with other tortoises native to the U.S. and Mexico.

Appendix A

History and Brief Summary of Endangered Species Legislation

Congress passed the Endangered Species Preservation Act in 1966. This law allowed listing of only native animal species as endangered and provided limited means for the protection of species so listed. The Endangered Species Conservation Act of 1969 was passed to provide additional protection to species in danger or worldwide extinction. A 1973 conference in Washington, D.C. led to the signing of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which restricted international commerce in plant and animal species believed to be actually or potentially harmed by trade.

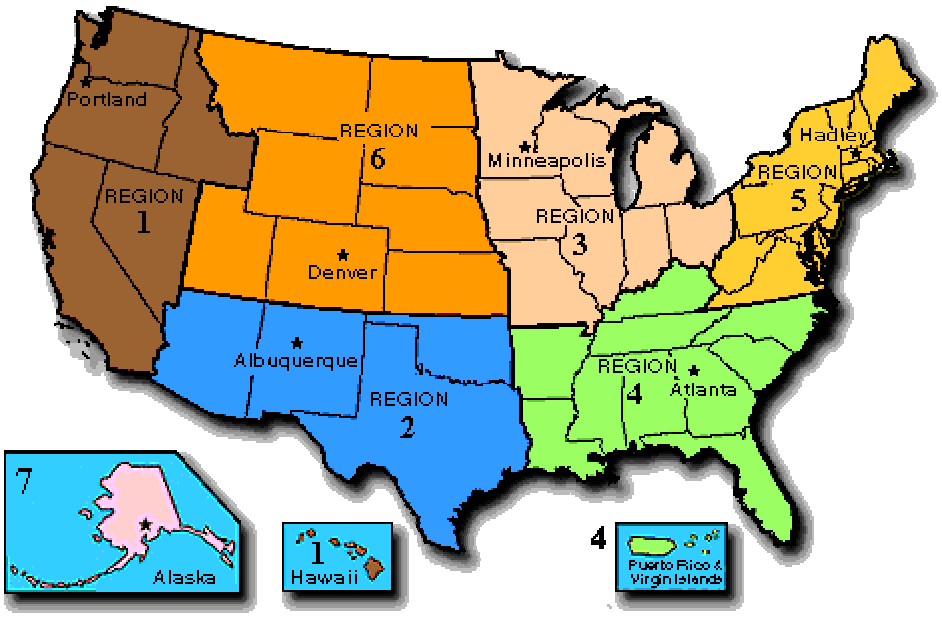
Also in 1973, the Endangered Species Act (ESA) was passed (the full text of the Act is accessible at: http://endangered.fws.gov/esa.html), which combined and strengthened the provisions of its predecessors and also broke new ground. The FWS in the Department of the Interior and the National Marine Fisheries Service in the Department of Commerce, share responsibility for administration of the ESA. Regulations enforcing the provisions of the ESA are specified in title 50, part 17, of the Code of Federal Regulations (50 CFR 17). Some of the Act's principal provisions are:

- U.S. and foreign species lists were combined, with uniform provisions applied to both (section 4);
- Categories of "endangered" and "threatened" were defined (section 3);
- Plants and all classes of invertebrates were eligible for protection, as they are under CITES (section 3);
- All Federal agencies were required to undertake programs for the conservation of endangered and threatened species, and were prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its "critical habitat" (section 7);
- Broad taking prohibitions were applied to all endangered animal species, which could apply to threatened animals by special regulation (section 9);
- Matching Federal funds available for States with cooperative agreements (section 6);
- Authority was provided to acquire land for listed animals and for plants listed under CITES (section 5); and
- U.S. implementation of CITES was provided (section 8).

Plants and animals protected by the ESA are classified into one of two categories, endangered or threatened, based upon the population status of each species. Endangered species are those currently in danger of extinction throughout all or a significant portion of their range. Threatened species are those likely to become endangered in the foreseeable future. Provisions of the ESA allow specific populations and/or subspecies of the same species to be evaluated on an individual basis; therefore a particular species may only be protected within a portion of its total geographic range. In order to protect listed species, similar appearing species, which are not endangered or threatened with extinction, may also be listed. In addition, "Critical habitat" provisions of the ESA allow for governmental protection and/or acquisition of areas vital to the survival of the species.

Appendix B

U.S. Fish and Wildlife Service Regions



U.S. Fish & Wildlife Service Regions

(Click on a Region below to access its home page)

Pacific Region (Region 1)
The Pacific Region includes California, Idaho, Nevada, Oregon, Washington, Hawaii and the Pacific Islands.

Southwest Region (Region 2)
The Southwest Region includes Arizona, New Mexico, Oklahoma and Texas.

Great Lakes-Big Rivers Region (Region 3)
The Great Lakes-Big Rivers Region includes Illinois, Indiana, Iowa, Michigan, Missouri, Minnesota, Ohio and Wisconsin.

Southeast Region (Region 4)
The Southeast Region includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Puerto Rico/Virgin Islands, South Carolina and Tennessee.

Northeast Region (Region 5)
The Northeast Region includes Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia and West Virginia.

Mountain-Prairie Region (Region 6)
The Mountain-Prairie Region includes Colorado, Kansas, Montana, North Dakota, Nebraska, South Dakota, Utah and Wyoming.

Alaska Region (Region 7)
The Alaska Region consists of the state of Alaska.

There is no Region 8 – the research centers are now part of the biological resources organization in the US Geological Survey. Region 9 is the Washington Office.

Appendix C

DOE National Environmental Research Parks

The concept of environmental research parks grew out of the National Environmental Policy Act of 1969, the Energy Reorganization Act of 1974, and the public's desire to protect the environment. The idea is also consistent with the 1969 policy statement of the Federal Council for Science and Technology, encouraging Federal laboratories to make their unique research and training facilities available to a broader spectrum of the scientific community. The DOE National Environmental Research Parks provide opportunities for many types of environmental studies. The parks are especially convenient because they are associated with the DOE national laboratories, which have a stable infrastructure and a cadre of environmental scientists who are a resource for visiting researchers and the public.

The objectives of the research parks are to conduct research and education activities that will:

- Develop methods for assessing and documenting the environmental consequences of human actions related to energy and weapons use.
- Develop methods for predicting the environmental consequences of ongoing and proposed energy development.
- Explore methods for eliminating or minimizing predicted adverse effects of various energy and weapons activities on the environment.
- Train people in ecological and environmental sciences.
- Use the parks for educating the public on environmental and ecological issues.

The seven DOE National Environmental Research Parks are located within six major ecoregions of the United States (Figure 1). These ecoregions cover more than half of the nation. In some cases the research parks are the only ecological sanctuaries in the region. The parks are especially important because, within their borders, they provide secure settings for scientists to conduct research on a broad range of subjects, such as plant succession, biomass production, environmental behavior of radionuclides, cost and effectiveness of recolonization of disturbed lands, and thermal effects on freshwater ecosystems. The parks also provide rich environments for training researchers and introducing the public to ecological sciences.

Appendix C (con't.)

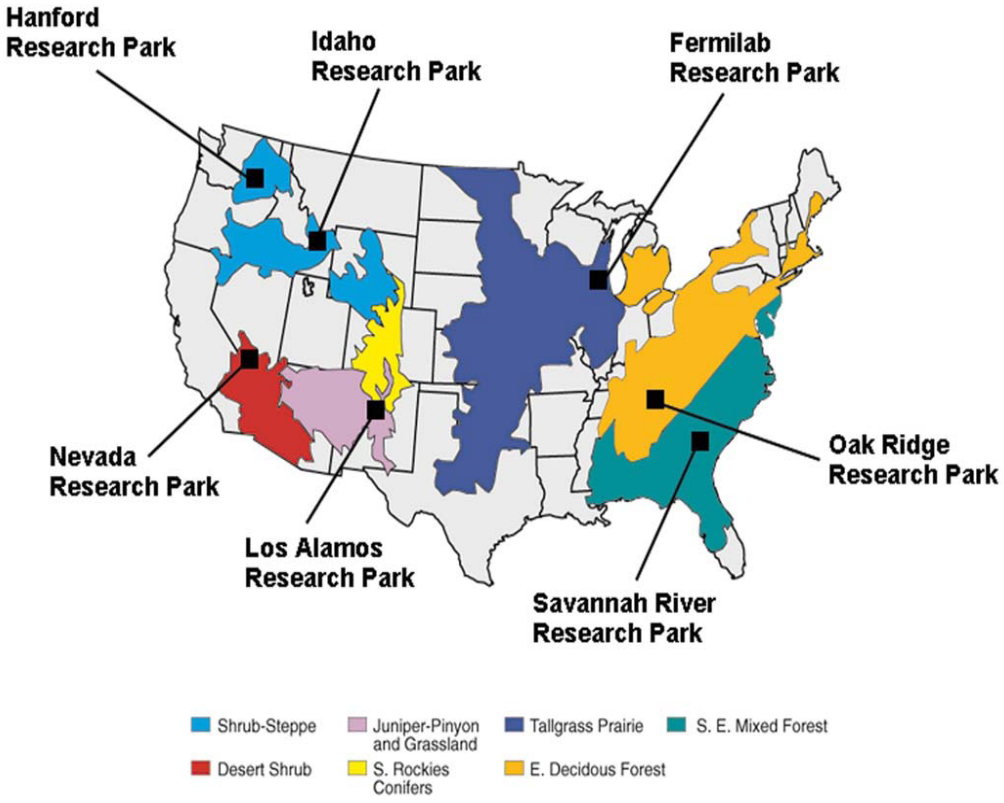


Figure 1.

Click on the links below to access additional information on the research parks.

Homepage	Overview	Specific Parks	History	Research	Ecoregions	Charter	Park Use	Comments

Appendix D

Success Stories!

Two federally endangered species, the Aleutian Canada goose (*Branta canadensis leucoparia*) and the peregrine falcon (*Falco peregrinus anatum*), which have been observed on some DOE sites, have recovered sufficiently nationwide so that the US Fish & Wildlife Service has delisted them (removed from the list of federally endangered and threatened species). The Aleutian Canada goose was delisted on March 20, 2001 and the peregrine falcon was delisted on August 25, 1999.

Photo: US Fish & Wildlife Service

Aleutian Canada goose (*Branta canadensis leucoparia*)

Photo: US Fish & Wildlife Service

Peregrine falcon (*Falco peregrinus anatum)*